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HISTORIES OF INTERNET GAMES AND PLAY: SPACE, TECHNIQUE, AND MODALITY

Teodor Mitew and Christopher Moore

Introduction

It would be a daunting task to attempt an authoritative history of the Internet and play, and it is not our intention to sketch such an account, in the singular, even if the space allowed for it.

Rather, we have undertaken a preliminary mapping of those elements which, we argue, should participate in the telling of the histories of Internet games. For this approach to work, we must stray from the usual litany of dates and events constructing the illusion of teleological progression leading to a terminus. Instead, we have built our argument around the key elements that, we think, should *always* be present in the telling of histories of Internet games and play.

Consider the experience of playing Internet games using a Personal Computer (PC) as a process that is constructed and continually performed in space and time. The process inevitably involves a material space, the computer hardware, an Internet connection, and a digital game modulated and mediated for play in these settings. While physical places such as lounge rooms and Internet cafés, and technical strata such as computers connected through low-lag fiber to game servers, can be imagined fairly straightforwardly, the modalities of digital games include a heterogeneous set of elements such as genre, storyline, play-world, player numbers, mode of distribution, and so on. The entire experiential construct of Internet play is in effect a function of the alignment of

these key elements into a temporary, but stable, network of nodes, which can be imagined as the proverbial black box of actor network theory (Latour 1999).

Therefore, in approaching Internet games historically, we propose to open the black box, and focus on selected historical alignments between game spaces (spatiality), the technical strata (technique), and the genres and modes (modality) of play. Furthermore, if these black-boxed relations can be argued to generate the affordances of Internet games, then it follows that we have to approach all spaces, technologies, and modes of play as operating on the same flat ontological plane. In other words, we cannot take it as a starting point that one of these elements is somehow more real, officially precedent or structurally more important than the others in our historical perspective.

Importantly, our approach is not methodologically unique and has a distinguished pedigree in the history of historiography. Fernand Braudel, perhaps the most notable representative of the Annales School, argued in his seminal history of the Mediterranean (1995) that one cannot tell the multiplicity of histories of that heterogeneous region without accounting for heretofore ignored elements such as climates, landscapes, and currents in all their complex materiality. In Braudel's telling, sea currents, hills, valleys, river estuaries, and deep water bays are all equally enmeshed in the production of histories, and on the same ontological footing, as the kings, institutions, and other human protagonists we are used to encountering on the pages of history books. Crucially, this approach does not position the affordances of geography as hierarchically more important than human agency, rather, both are co-formative of the compost of entangled agencies forming history.

Similarly, the triad of game spaces, game techniques, and game modalities could be imagined as a prism through which the historicity of Internet play is to be approached. Simply put, in discussing game spaces from a historical perspective we inevitably have to account for the modalities of genre and the technical stratum of play; in discussing the historical influences of broadband connectivity on the experience of Internet play, for example, in terms of distribution, we are inevitably forced to account for the spatial element as well as the changing modalities of genre; and finally, a historical account of the modalities of game play as exemplified by genre has to also account for the roles of spaces and technicities of play in performing that genre.

That being said, the meticulous attention to logistical details necessitated by our approach is the main constraint facing our argument. Inevitably, our approach involves curtailing discussion of some developmental vectors that must be acknowledged and anticipated, not because they are less important, but due to simple limitations of scope. In assembling an analytical framework that positions its three poles of space, technique, and modality around a narrated history of multiplayer PC games, we have necessitated a limited attention to the contribution of other important innovations, technologies, and practices, including mobile telephony and portable devices, from the Nintendo Gameboys to the openness of the Android operating system which lends its particular set of affordances to the development of new markets and multiplayer experiences. Similarly, while we have attempted to frame this as a global history, our attention to the role of gender, race, sexuality, and the extensive involvement of participants in the sub-cultural formations crucial to the mainstream success of those genres we do consider, are not absent from our consideration, but necessarily limited in detail here.

Modalities of play

We begin our discussion by focusing on the modalities of genre and game-play, followed by the role of game-spaces in formatting play, and finally consider the intersecting roles and histories of technical strata in the production, distribution, and serialization of game play online.

In thinking about the history of Internet games and play from the perspective of genre and modes of game-play we are confining our scope to three modalities so large and present in various histories of the Internet that they have come to define entirely new game types and styles of play: the First Person Shooter (FPS), the Real Time Strategy (RTS), and the Role-Playing Game (RPG). It is through these three modalities of Internet-enabled multiplayer games that we argue the history of the Internet and games is also a history of play that moves outside the boundaries of the interactive experiences of games and their virtual worlds. In effect, this creates a meta-modality, or the play of play, which variously involves what Axel Bruns (2008) considers as produsage, or along the lines of George Ritzer et al's (2012) revision of Toffler's concept of prosumption, and what Henry Jenkins (2006) and Joost Raessens (2005) refer to as participatory media culture. These are crucial meta-modal forces in determining the cultural dimensions of game genres, play spaces and the success, adoption, and modification of game techniques.

Our contention is that, in this context, the PC platform should be imagined as a nodal extension of the Internet in the home and the Internet café, a spatio-technical integration of domestic and

public environments serving as a liberating affordance for players. Through their infiltration of these spaces, initially in the late 1980s and extensively in the 1990s, games provided a consumer vector for the waves of personal new media and entertainment devices and content, contributing directly to the PC industry as a driver of technological and design innovations and choices: take, for example, current generation PC architecture, which has been fragmented thanks to the PC games market emphasis on graphical processing units to offset the computational demands of modern FPS games. Similarly, the change of modem speeds from 24k to 56k (circa 1995), and broadband levels (in the early 2000s), is easily associated with the domestic connectivity demands of Massively Multiplayer Online games.

Titles including the hugely popular US based *Ultima Online* (1997), and one of the first graphical virtual worlds, the French *La 4ème Prophétie* (1999), and *Lineage* (1998), which saw massive success in South Korea and Taiwan, were influential drivers of domestic Internet connectivity. These games provided a model for second wave MMORPGs that relied heavily on broadband connections for content distribution as well as play, including the Icelandic *Eve Online* (2003), and Sony's *The Matrix Online* (2005) and culminated in third wave massively multiplayer games with intense graphic processing and high stakes competition that demanded conditions greater than 56 kilobits per second, such as *Age of Conan: Hyborian Adventures* (2008), *Warhammer Online: Age of Reckoning* (2009), *Lord Of The Rings Online* (2010), *Star Wars: The Old Republic* (2011), and *Star Trek Online* (2010). These games largely mark the end of big budget massively multiplayer role-playing games, as most transformed from subscription services to free-to-play games with premium purchases quickly after launch, and the player base shifted interest to other emerging genres of PC-enabled Internet play.

The game console obviously enters this field of relations, but is newer to networking and Internet connectivity and therefore largely absent from early online play cultures; it is also less central to technological change than the PC, and more peripheral to the technologies of production, as it is located primarily in the domain of domestic entertainment and the living room. The development of console operating systems and their Internet and network connectivity is parallel to the already compromised design of always-already closed hardware necessarily lagging behind the desktop equivalent due to the constraints of massification and standardization of its production. What is more, arguably it was profound failure at the content and hardware layers of the console industry that contributed to the 1983-1984 collapse of the video game industry (Apperley 2006: 8).

From a historical perspective, the 1980s were a pivotal era for the development of the modalities of Internet games: Commodore released the Amiga 1000, Apple launched the Macintosh, and IBM released the first PC-AT – a high end domestic PC based on the Intel 80286 chips around which the majority of the PC games industry would be organized. The Internet Domain Name System was created in this time frame, establishing some of the most recognized Web domains including .com .gov, .edu, .org, and .net, and this was also the period in which William Gibson (1982) would coin the term cyberspace, and lay the foundations of cyberpunk, still infecting much of contemporary science fiction.

Simultaneously, the popularity of the multiplayer fantasy game genre was cemented in the early 1980s with the third revision of the Dungeons and Dragons (D&D) *Basic Set*. It was the algorithmic nature of the pen-and-paper tabletop role-playing system of “D&D” which served as

the foundation for a modality of play in single player and multiplayer fantasy genre experiences that traces a trajectory through some of the biggest selling PC games in the fantasy MMO and RPG games: from *Colossal Cave Adventure* (1977) and *Zork* (1980), to the *Advanced Dungeons & Dragons* Gold Box Adventures (1988-90), the first fully multiplayer experiences of *Ultima Online* (1997), the LAN party RPG favorite *Neverwinter Nights* (2002), and the penultimate MMORPG *World of Warcraft* (2004).

This is the socio-technical compost from which the science fiction and fantasy milieus of digital games rapidly evolve, as increased access to online community formations and fandoms was enabled by the increased domestic and institutional Internet access, from schools, public libraries, and universities. The confluence of the established modalities of the fantasy genre and increased access to domestic Internet connectivity in the 1990s, and broadband and cable connections in the 2000s, enabled new kinds of online role-play, competitive gaming, and simultaneous but geographically distributed play. This in turn was fundamental to a networked modality of genre play, one that is simultaneously virtual and spatially located (King and Krywinksa 2002; Apperley 2006).

Tom Apperley's (2006: 6-7) approach to genre is to overturn common assumptions that games are a consistent medium with a static aesthetic and rigid representational strategies, including drawing attention to "ergodic" (Aarseth 1997: 7) actions involved in the interactivity of video game play. Apperley builds on King and Krzywinska's (2002) critical approach to game genre that looks to the complex layering of assumptions and the totalizing misconceptions of genre as a

descriptive category for games derived from literary, film, and video industries and traditions, without looking to the dimensions of interactivity in the genealogical trajectories of video games.

The RTS, FPS, and RPG game modes are common interfaces for both fantasy and science fiction because of the way the spatiality of the game is organized and the particular formatting of the player's point of view. For example, *Starcraft* is science fiction experienced through the RTS genre, and its multiplayer modality has served to orient the techniques of online multiplayer and format the cultural spaces of competitive leagues becoming the foundation for a global interest in e-sports (Dhoedt 2014). Digital game ethnographer T.L. Taylor suggests it is in part the formatting of multiplayer RTS and FPS games via Internet spaces, and the techniques of control over the material interface of mouse and keyboard, incorporating the player's body in the cybernetic assemblage (2013: 38), that arguably result in the often overtly misogynistic and "insider" nature of the experience (2013: 29).

The *World of Warcraft* franchise might owe a great debt to Tolkien and Chaucer, but its fantasy themes are clearly rooted in the Hollywood oeuvre of, frequently B grade, fantasy movies of the 1970s and 80s, including *Conan The Barbarian* (1982), *Legend* (1985), *Willow* (1988), *Labyrinth* (1986), *Red Sonja* (1985), *Krull* (1983), *Dragonslayer* (1981), and the *Dark Crystal* (1982). The point here is that the movies themselves shared similar cultural tropes with the literary pulp fantasy of Edgar Rice Burroughs, Robert E. Howard, Fritz Lieber, the Sword and Sorcery genre, and a further lineage of historical fiction (Sir Walter Scott), each serving as an expression of an escapist milieu and a reaction to the reality of the times. Similarly, the techniques of the fantasy modality shine through the collaborative world that is the experience of

World of Warcraft, not only in terms of the representational and generic elements, but also the technicity of the adventuring “party”. The party mechanic is core to the experience of the networked virtual reality of the fantasy role playing game in both single player and multiplayer modalities and spaces.

The spatiality of networked fan cultures of fantasy RPGs enabled the personalization of the game content through modification and the provision of user generated content, a practice transported directly from the technique of the pen-and-paper era. Bioware’s *Neverwinter Nights* (2002) used digital distribution of content and access to legitimate modding tools to enable players access to the technicity of the meta-player, similar to the modal experience of the Games Master (GM), creating virtual spaces to adventure in, and community spaces via the Web, to build and share an enormous amount of content. The collaboration and participation was made possible by the technical affordances of the game, and the modalities of its distribution, creating hundreds of thousands of communally experienced stories and interactions.

The human-algorithmic hybrid nature of the Dungeon Master (DM), or GM, in pen-and-paper games, required a player dedicated to operating the role-playing game system for its other players by interpreting and applying the game rules, which usually require dice rolls to determine outcomes and resolve player-nominated strategies. This technique of the RPG modality continues to inform the spaces and technologies of contemporary MMO experiences and defines the RPG milieu, its vocabulary and its terminology: hit points, gold pieces, experience points, etc. The DM is an interface between players and the game, the techniques of world building and algorithmic logic, the content experience and the spaces they occupy. Biowares’s modding and

content-creation toolset for *Neverwinter Nights* extends the DM, and provides a technique of meta-spatiality, giving control over all elements of the narrative and play experience of the game to the player; control over story, events, actions, and other storytelling dynamics provided a more personalized experience than is possible using the pre-programmed and automated narratives processes of automated storytelling game engines (Tychsen *et al* 2005).

Space and Spatiality

If there is contrast in the way play is encountered and performed in different types of spaces, we are able to make the argument that the history of Internet play is also a history of spaces. Take, for example, the new capacities for mobile Internet technologies and mobile Internet-enabled devices to reformat any space, no matter how formalized and institutionalized, into a playful one of a game space through the act of play (Moore 2011).

In accounting for the spatial element in the experience of the modalities of play, we have to consider the situated experiences of the human player and the materiality of play-spaces formatting the affordances of those experiences. Here, space is understood not as a Cartesian shell populated by the subjectivity of human players, or limited to interaction between a player, input devices, algorithm, and screen, but as a fundamental element in the continuous performance of the experience of play. Consider the material dimensions formatting the social conventions and underpinning the cultural experiences of a Local Area Network (LAN) or Internet café. These are connected physical spaces hosting access to the digitally networked

game spaces, which demonstrate multiple layers and modalities of play, which includes, but is not limited to, the multiplayer game mode.

Spaces like the living room or bedroom occupied by the personal computer; the cramped and confined spaces of the ad-hoc LAN room strewn with cables, tables, PC cases, and large CRT monitors; the sprawling vistas of cloned desktop machines of LAN cafés; the flat-screen booths with PC towers crammed with high capacity graphics cards of the Korean PC Baang. Each of these techniques informs the spatial configurations and has its own affordances co-performing the experience of play, each of them is always already infused with *a* culture and *a* set of practices entangling and performing the player as firmly as the player directs protagonists on the screen via the cybernetic controls of keyboard and mouse.

Arguably, the Internet has repositioned play as a central fixture of mainstream entertainment. As Jesper Juul has observed (2010), trends in technical and cultural convergence have culminated in the ubiquitous presence of games, increasingly public and mobile in their play (Moore 2011), and from this commonality have re-normalized both games and play in contemporary and popular culture for audiences of all ages. Were it not for the Internet's ability to connect machines and humans, we would not have globally shared the “massively” single player experience of the open world of *Grand Theft Auto 5* (GTAV) (2015) and its sprawling narrative and equally massive virtual space, which sold 45 million copies across previous and current generation video game consoles, earning more than \$2 billion in revenue in 2014 (Grubb 2015; McWhertor 2015).

Later in 2015, the publication of *GTAV* on the PC digital distribution platform Steam, developed by the Valve Corporation, saw a peak simultaneous player base of 300,000 gamers, all occupying the same, but individually realized, virtual worlds concurrently before the release of the game's official multiplayer element, connecting players together in an open world environment (SteamSpy 2015). The different modalities of the Internet-enabled single-player and multiplayer experience of *GTAV* occupy multiple spatialities and techniques that exist well outside the direct cybernetic interface of the virtual world, creating an intersecting vector through which all "play" has the potential to "move" (Moore 2011).

This movement extends beyond the controller and screen to the participatory media cultures of games and gamers (Raessens 2005), whose affective investment in the labor of play activities is shared via the materiality of play, capturing and rendering it through the techniques of screenshots, memes, reviews, blog posts, forums, and software and hardware modifications. This has led to the establishment of new genres of niche paratextual and creative industries enabled by the Internet (Consalvo 2009; Moore 2012, 2014) and the Web: from the hand-crafted game memorabilia, unique hardware modifications, and unofficial game-related merchandise sold via Etsy and Ebay, to the constant stream of images contributed under the Instagram and Flickr #cosplay hashtag, and the millions of hours of live streamed gameplay via Twitch TV and the YouTube genre of *Let's Play* videos that have come to dominate the economics of televisualized and remediated play (Dredge 2013). The Internet, the hardware layer of networking technologies, and the software layer of the Web, have enabled these new modalities of play combining to produce and regulate spatialities of commercial consumer culture within systems of major global production and social relations.

Significant scholarly attention has considered the arrangements of techniques and modalities of LAN play, which built on the Internet protocols of high-speed and low-latency network communication to create a multiplicity of play spaces. These spatialities include the commercially run Internet Cafés and PC Baangs (Chan 2006; Swalwell 2009), the massive Nordic LAN competitions, including “Assembly” – the world's largest LAN “party” held annually in Helsinki, Finland (Tyni and Sotamaa 2014), as well as the smaller scale ad-hoc LAN “parties” which involve the incorporation of PC and console technologies in the temporary reformatting of more domestic spaces (Jansz and Martens 2005). In American culture the Internet café played only a minor role where the LAN “party” was more present and less geographically persistent (Taylor 2013), but not so in Europe and Asia where a different cultural history of online games is encountered. A set of cultural experiences based not on the distributed suburban spatiality of most American and Australian cities, but rather on much more communal and urban spaces (Chan 2006).

The success of LAN driven game genres, supported by the participatory media cultures of software and hardware modification (Postigo 2007), has produced multiple generations of new modalities of play; from the very first FPS multiplayer experiences of Doom (1993) to the recent rise of another entirely new game type enabled by player modding communities, the Massively Online Battle Arena (MOBA), and its mediation via the Internet, especially social media and online streaming, achieving critical mass for the global e-sports tournament industry.

E-sports are a modality of LAN culture and Internet technologies that were popularized in the 1990s (Taylor 2013), but extend precedence to competitive modalities and social practices of play in ritualized public spaces from early gambling halls, pinball parlors, amusement arcades, and eventually video game arcades and Internet cafés. Notably, the modalities of e-sports feature both the atomized domestic spaces of living rooms and bedrooms televised via Twitch TV and YouTube, and the same virtual spaces used to televise the large hyper-mediated public events of global e-sports leagues and finals matches resembling rock concerts. In both cases, low latency bandwidth enables the performance of these modalities in front of highly scalable global publics – an excellent example of the triad of modality, space, and technique in all histories of Internet, games, and play.

In addition, e-sports attract massive global audiences for games that began, or were inspired by, player-contributed modifications of other games, including Valve's *Dawn of the Ancients 2* (DOTA2 2013), *League of Legends* (LoL 2009) and Blizzard's *Heroes of the Storm* (2015). The publisher of *LoL*, Riot Games, attracted a global audience of 32 million people for the Season 3 World Championship in 2013, with its TwitchTV live coverage peaking at 8.5 million simultaneous viewers (McCormick 2013). In this example, new public spaces and modalities of play, and the cultures of their consumption and production, are entirely indebted to the availability, affordability, and sociality of Internet-enabled technologies (Taylor et al 2014; Taylor and Witkowski 2010).

Taylor et al's actor network theory analysis of the temporal and spatial arrangements of LAN events illustrates the interconnected assemblages of participants, researchers, games, and gaming

platforms as public gaming sites – an approach that reveals prior held convictions and fears regarding the notion that online games are detrimental to real world sociality is “inaccurate and limiting” (2014: 77). Their approach documents clear tensions in two modalities of play, both in terms of the gender construction and spatiality of the hyper-feminized and masculinized representations of video game content and its physical instantiation in the limited access women have to “public” game sites, and the levels of hostility demonstrated to women in these heavily male dominated spaces:

Not only were women clearly a minority across these sites, but the sociospatial organization of their attendance often made it difficult to approach them. At LAN events in particular, female attendees who were part of larger, male-dominated groups (usually the girlfriend, wife or relative of one of the male attendees) were typically positioned at the end of that group’s row of computers, often playing a single-player game while the other (male) group members played in multiplayer games together (Taylor et al 2014: 774).

Histories of Internet games and play are therefore always already unfolding on networks preconfiguring how play is framed and understood. They are also histories of digital distribution, new technologies, new spaces, and modalities of consumption, as the technical layer of the Web interfaces between players and the “bricks-and-mortar” realm. The range of modalities of production that have occurred from this transition include crowd-funding, serialization of game content via downloadable content (DLC), and the move to open player *beta* periods of pre-release testing and prepaid access to unfinished games. Both the success of digital distribution

and the extent of game piracy is preconfigured by the rise of Internet, software, and hacker cultures, a pattern that emerges again in still earlier iterations and precursors like the BBS.

The Internet has enabled new authorized channels of distribution, reformatting the public spaces of the Web as commercial ones. Non-corporate publics however, have taken the affordances of digital technologies in opposite directions, formalizing the practice of file-sharing emerging from the ideological and anti-authoritarian regimes of hacker culture, from the very outset of the Internet up to its current iteration in torrent sites like The Pirate Bay (see Figure 1.0), which replicates modalities of the “zero day” pirate websites and warez Internet communities of the late 1990s and early 2000s:

The Warez scene in a sense is focused on engaging a kind of meta-game that involves modding game software products. Game piracy has thus become recognized as a collective, decentralized and placeless endeavor (i.e., not a physical organization) that relies on torrent servers as its underground distribution venue for game warez (Scacchi 2010).

The technicity of early Internet piracy involved software “cracks”, small files used to circumvent anti-copying devices on material media, such as serial codes and registration numbers. The product of hackers and the “warez” community, who managed networks of disk piracy to access content, these disks become the basis for the “sneaker” net at LAN events, as files were traded on physical disks before broadband access and high-speed LAN networks were fast enough to support both file-sharing traffic and the networked game data.

Technique and Technicity

Until the advances of fast Internet speeds and the density of broadband connections to support the distribution of large digital files, game piracy also manifested within physical distribution vectors including the CD and DVD “burner”, which replicated the originally purchased disk ad infinitum to be sold by street and market vendors across Eastern Europe and Asia. Throughout South-East and East Asia in the early 1990s this practice was completely institutionalized as an open market of pirated copies of music, movies, and games, and was even regulated into similarly discrete vendors. Copyright infringement in China, especially with regards to Western media and software, is even today only minimally policed (Ma 2015), with copyright having little cultural foundation in political or social life. The country has only recently started ratifying the major international intellectual property rights treaties (Bates and Liu 2008).

China’s regulations on the sale of Western video game consoles included heavy taxation and strong restrictions. Following the 2000 ban on console games (Aslinger 2013: 62), these conditions created an intensive focus on PC games with local network and Internet play, from casual online games like *QQ Speed* (Tencent QQ Games 2008), to the retelling of *Journey to the West* in the popular *Fantasy Westward Journey* (Net Ease 2004), and massively multiplayer online games *Demi-Gods and Semi-Devils* (Sohu Games 2007) and *League of Legends* (LoL, Riot 2009). The local industry has operationalized culturally specific spatialities as a result of

adopting PC and Internet technologies that produce a complex modality of strongly regulated but highly popular networked environments.

Figure 1.0: A screenshot of The Pirate Bay PC games offering

In responding to the problems of standardizing the technologies of multiplayer and managing online content and attending to the modalities of Internet piracy, in 2003 the Valve Corporation created a new online space for the digital distribution of games, called Steam (Crossley 2011). Steam is a technique of destabilizing the fixed modalities of PC games and serializing their development over time through consecutive patching delivered via peer-based Internet connections, simultaneously connecting PC players of games like *Counter Strike* (1999) and *Half-Life* (1998) multiplayer to the already established infrastructure of global servers (Bishop 2011).

No longer confined to the department store or the video games retail chain outlet, or even the massive national chains like Walmart, the virtualization of consumption via Steam and other digital distribution channels has become the ground for new commercial social spaces (Newman 2012). These are spaces of consumption and of a social interaction that simulate the experience of North American style mall culture, Japanese pachinko halls, or the communal aspects of arcade culture. Steam also shares a sense of the “arcade” with Walter Benjamin’s *Arcades Projects* (1999), a spatiality for exploration, and an enclosing technique of architecture lending itself to new modes of consumption and non-linear narratives of experience, perfect for Benjamin’s juxtaposed reflections and montaged accounts.

With Steam, Valve has developed the platform to serve a daily user base of 12 million players (Steam 2016), transforming a content delivery platform into social network, a library, a cinema, a gallery, and a video game arcade. Steam is a retail interface to networked digital space for the curation and presentation of traces of achievements and accolades, screenshots and machinima, mods, friends, groups and communities, forums, blogs, reviews, links, and jumping off points and other “pieces of the digital urban nomadism”, and the collected traces of urban life similar to those including handbills, tickets, photographs, advertisements, diaries, and newspaper cuttings (Featherstone 1998: 990).

Alongside Steam, the Apple iOS game store, and the online stores of the major video game consoles, it is Facebook and other serialized digitally distributed online game content and RPG environments like MMORPG World of Warcraft (Blizzard 2004) and the single player RPG Skyrim, that have catered to traditional marginalized video game audiences (Martey et al 2014; Fahs and Gohr 2012).

In addition, Steam’s distribution model largely eliminated problems of access to physical stores and scarcity-bound game copies, which helped to reduce piracy and support the development and sale of “indie” and independent games (Bergquist 2011). Before the arrival of Steam, the Internet was relied on for non-mainstream games and access to cracks, hacks, and mods that would enable play (Best 2011). Today, access to “pirate” content resides on the same torrenting sites as the games themselves (see Figure 1.0), with sites such as The Pirate Bay acting as convenient

spaces for locating the large files of contemporary games, and the legion of Warez, Crackz, and Serials sites that form the dark underground of the Internet.

The materiality of the physical copy enabled a modality of sharing, connecting the spatiality of street markets and sociality and culture of disk-trading at LAN events and Internet cafés, connected to the virtual spaces of the Web. This is why we are making the argument that a history of the Internet and games is a history of the relationship of the spaces for play, and enabling play, and how their intersection has created new global markets in the digital distribution of games. As Internet speeds increased, the spaces of piracy and gaming were increasingly virtualized, and yet still retained physical connections to the games industry, from gold farming hostels (Heeks 2010: 11) to bitcoin mining operations which use the graphics hardware designed for the specialty PC gaming markets on a technically sophisticated level usually associated with the Silicon Valley.

Conclusion

Our aim with this brief overview is to draw attention to the persistence and integrated nature of questions of game modality, spatiality, and technique in the histories of the Internet, games, and play. In using this approach, we have addressed the contention that the Internet has simultaneously facilitated the dematerialization of the physical copy associated with accessing games, and rematerialized play as investment in the new global market in a mix of official and unofficial channels of consumption, from licensed merchandising to fan-produced cosplay and other expressions of participatory media culture.

The degree to which the technologies of the Internet, especially the diffusion of high-speed broadband Internet connections, have made new game spaces possible, including those for the reconfigurations of the modalities of play, is matched only by their enclosure within the formalized modes of industrial production, as beta-testers, mod-creators, community leaders, and so on (Moore 2005). The “play” *of* and *with* games is a result of the spatial, modal, and technical triad of Internet affordances, which supports the movement and appropriation of content outside the boundaries of the game’s own representational strategies and technical interactions. This modality of play has been officially incorporated within the techniques of game development, through the technical and legal responses to physical and digital piracy, in terms of new spaces of consumption such as Steam and Facebook, as well as new methods of digital distribution extending game and play spaces to new material settings.

Those parts of the game industry which organized along a re-creation of the cinema or television studio model encompass a more traditional spatiality grounded in a highly successful model of production. Crucially, this production model presupposes a legal regime of property built around physical goods, often linked vertically and horizontally in the games industry between manufacturers like Nintendo, which also produce and distribute game titles, to studios who work with publishers and distributors.

Prior to the appearance of Steam, Xbox Live, the Playstation store, and other Internet-enabled marketplaces, this model operated within a highly regulated legacy media paradigm that construed the downloading and modification of digital copies as a transgression of the model. It

is important to note how unstable this studio mode of production is, and has been since the mid-1980s, following the crash of the Atari game console in 1983 (Bogost and Montfort 2009). The Australian games industry has undergone profound structural change following the global financial crisis, in which the major game studios, previously reliant on the global rates of currency exchange have closed, while concurrently seeing a massive rise in the success of “indie” and independent titles made available via Internet-enabled digital distribution platforms including Xbox Live, Steam, and the Apple iOS game store (McCrea 2013).

Parts of the games industry most like a legacy media studio were the most adamant in terms of technical anti-copying measures, while, on the other hand, the phenomenon of Valve was conceptualized at the intersection between technique, space, and mode. Steam was positioned by Gabe Newell, Valve CEO, as a response to the notion of piracy that addressed the core triad of technique, spatiality, and modality in re-conceptualizing copyright infringement not as the fault of consumers, but as a result of markets delivering poor service to consumers. In other words, in taking account of the triad of space, technique, and mode of play, Steam shifted the paradigm of Internet play to a new frame of reference, addressing the main artificially imposed inefficiencies of the previous regime.

Valve’s long term success here has been to codify the provided labor of gamers, incorporating them into the official techniques of industrial production, and in the process codify a new type of player (the beta tester) as a secondary market in unfinished games. By changing the modalities and techniques of play, this process also established a new space for the serialization of game content that eradicates the notion of “finished” games. Steam has dissolved the game commodity

as a self-enclosed static object, without diminishing its materiality, replacing it with a new type of fluid object commodified as a service, and changing and revitalizing the Internet games industry as result. As such, games have colonized mainstream entertainment via the affordances of Internet and Web technologies. This process offers new modalities of mediation, from YouTube to TwitchTV, and a veritable multitude of emerging play traditions of fan expression such as cosplay, as well as more traditional expressions of fandom including fan art and fiction that are translated to physical spaces of experience such as game LANs and popular culture conventions.

This shift in the triad of space, technique, and modality has profound effects, and one of the key things to understand and point out is that the effects are not only in terms of the economics of distribution, genre, and hardware. The effects also manifest in terms of structure, institution, narrative, experience, and interaction, and we need only look to the most successful contemporary games to observe how game development and public play have been integrated within an open ended processual experience.

It is true that titles and series like *The Elder Scrolls Skyrim*, *Total War*, and *Half Life* with their modding communities and massive degrees of user-contributed online textual resources have resulted in successful niche paratextual and creative industries, but this history of the Internet, games, and play, is also the history of new means for the commodification of play. It is also the case that the technical packaging of entertainment supports new modes of quantification and analysis, where the conditions of participation include improvements to the play based on the surveilled and incorporated activity of its participatory media cultures. The future of Internet

games continues to be anticipated within the prism of space, technique, and modality with new innovations and explorations of game structures, interactions, and interfaces of a range of emerging Virtual Reality (VR) technologies for the PC with the Oculus Rift and HTC Vive, and mobile devices with the Samsung Gear VR. At the time of writing, the third wave of VR innovations nears commercial release, and has the potential to offer radically embodied modes of mediation and interaction that will take extensive advantage of the locative features and Internet-enabled devices to deliver entirely new massively multiplayer experiences. Games, like *Hover Junkers*, are being designed entirely for VR is entirely controlled in a one-to-one analogue movement fully colonizing and transforming the physical play space.

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